



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

PROFESSOR FARADAY'S EXPERIMENTAL INVESTIGATION OF TABLE-MOVING.

THE "new power," which table-moving has been thought to disclose, has at length been investigated by an experimental philosopher. The conclusion to which he has arrived is, that tables are moved simply by unconscious muscular action, having nothing to do with electricity, magnetism, attraction, or any unknown force whatever, much less, as some have boldly asserted, the motion of the earth, or supernatural agency. The excited state of the public mind, both in America and Europe, on the subject of table-moving, called for some investigation; and Professor Faraday, with a view to banish false notions respecting it, has taken considerable pains to discover the real motive-power by which the various phenomena of table-moving are produced. The results of his ingenious and interesting experiments, and the methods by which he arrived at them, have been communicated to the public by that eminent scientific authority. That our readers may retain in a permanent form that which otherwise might exist only in the pages of a newspaper, we present them with a brief epitome of the professor's experiments.

After explaining his reasons for making the inquiry—not that his own doubts on the subject of table-moving might be satisfied, for he never had any, but that he might be enabled to give a decided opinion, founded on facts, to the many who applied to him—the professor proceeds to show by what steps he arrived at the conclusion—that the table, or any other inert matter, had no power of moving except that which was communicated directly to it from the hands of the operators. He associated with him several honourable, but sincere, believers in the table-moving mania; and, after a few experiments, in which abundant motion was communicated to the pieces of furniture operated upon, he clearly saw that the table moved under the action of ordinary mechanical power, when the parties did not intend, and did not believe, that they moved it by any such means.

But he sought to *prove* to these honourable believers, and through them to the public, that they really did move the table in this way, and that the influence of expectation on their minds was the actual cause of their hands moving the table, and that the table did not move their hands. His first object, therefore, was to remove all suspicion of electrical agency. Hence plates of the most opposite electric affinities, namely, sand-paper, millboard, glass, moist clay, tinfoil, cardboard, gutta-percha, vulcanised india-rubber, wood, &c., were made into a bundle and placed on the table under the hands of the operators. The table turned, nevertheless, though no electric or magnetic effects could be produced. Bundles of other substances were used and placed under the hands of different persons, but still the table turned. Neither during the use of these substances, nor at any other time while the experiments were in progress, could any apparent motion be observed in the hands of the operators; and no form of operation or mode of observation gave the slightest indication of any peculiar natural force. No attractions or repulsions, or signs of tangential power, appeared—nor anything that could be referred to other than the mere mechanical pressure exerted moderately by the operators. The tables went round, forwards, backwards, and sideways, at the will of the turners, and nothing of either "collusion, illusion, or delusion" was apparent.

But this cursory examination did not satisfy the professor. He therefore proceeded to analyse the kind of pressure exerted, at first unknown to the operators. Several pellets of a cement made of wax and turpentine were fixed on the under side of a piece of cardboard, and then placed on the table. The table turners laid their hands on the cardboard, and the professor waited the result. The table moved as before; but on examining the under side of the cardboard it was easy to see "by the displacement of the pellets that the hands had moved further than the table, and that the latter had lagged behind; that the hands, in fact, had pushed the card to the left, and that the table had followed and been dragged by it." It

was evident, therefore, that the table had not drawn the hands and persons, nor had it moved simultaneously with the hands. The hands had left all things under them behind, and the table evidently tended continually to keep the hands back.

"The next step was to arrange an index which should show whether the table moved first, or the hand moved before the table, or both moved or remained at rest together." Various ingenious contrivances were invented and applied, "the result of which was," says Professor Faraday, "that when the operators saw the index it remained very steady; when it was hidden from them, or they looked away from it, it moved about, though they believed that they always pressed directly downwards; and, when the table did not move, there was still a resultant of handforce by which it was wished the table should move; which, however, was exercised quite unwittingly by the party operating. This resultant it is which, in the course of the waiting time, whilst the fingers and hands become stiff, numb, and insensible, by continued pressure, grows up to an amount sufficient to move the table or the substances pressed upon. But the most valuable test of this index apparatus (which was afterwards made more perfect and independent of the table), is the corrective power it possesses over the mind of the table turner. As soon as the index is placed before the most earnest, and they perceive—as in my presence they have always done—that it tells truly whether they are pressing downwards or only obliquely, then all effects of table-turning cease, even though the parties persevere, earnestly desiring motion, till they become weary and worn-out. No prompting or checking of the hands is needed—the power is gone; and this, only because the parties are made conscious of what they are really doing mechanically, and so are unable unwittingly to deceive themselves. I know that some may say that it is the cardboard next the fingers which moves first, and that it both drags the table and the table turner with it. All I have to reply is, that the cardboard may in practice be reduced to a thin sheet of paper weighing only a few grains, or to a piece of goldbeaters'-skin, or even—in principle—to the very cuticle of the fingers itself. Then the results that follow are too absurd to be admitted; the table becomes an incumbrance, and a person holding out his fingers in the air, either naked or tipped with goldbeaters'-skin, or cardboard, may be drawn about the room, &c.; but I refrain from considering imaginary yet consequent results which have nothing philosophical or real in them."

The professor's conclusion is, that the mind becomes absorbed, and the muscles follow the will of the operator without his being aware of it; just as, in the process of walking, the legs move without a direct appeal to the senses, the mind having once determined that they *shall* walk. It is not insinuated that the experimentalists in table-moving are not perfectly honest in their desire to arrive at the truth; all that the professor declares is, that they are self-deceived. "Persons do not know," says this authority, "how difficult it is to press directly downwards, or in any given direction against a fixed obstacle; or even to *know* only whether they are doing so or not, unless they have some indicator, which, by visible motion or otherwise, shall instruct them; and this is more especially the case when the muscles of the fingers have been cramped and rendered either tingling or insensible by cold or long-continued pressure. If a finger be pressed constantly in the corner of a window-frame for ten minutes or more, and then, continuing the pressure, the mind be directed to judge whether the force at a given moment is all upward, or all downward, or how much is in one direction, and how much in the other, it will find great difficulty in deciding; and will, at last, become altogether uncertain."

It is proper to observe that, notwithstanding the high position which Professor Faraday deservedly occupies in the scientific world, both the fairness of his experiments and the soundness of his conclusion have been called in question. Facts have been communicated to the public which certainly do not, at first sight, appear easy to be reconciled with his theory. The subject must be still further investigated before it can be considered as satisfactorily settled.